

CLAIMS

1. A composition comprising a block polymer encapsulating a functional material of a predetermined function and a solvent, wherein a
5 property of the block polymer is changed in response to a received stimulus, whereby the block polymer encapsulating the functional material agglomerates together.
- 10 2. The composition according to claim 1, wherein the composition comprises micelles of the block polymer encapsulating the functional material of a predetermined function and a solvent, wherein the property of the block polymer is changed in
15 response to the received stimulus, whereby the micelles of the block polymer agglomerate together.
3. The composition according to claim 1, wherein the block polymer is an AB, ABC or ABA block
20 polymer where A, B and C each represent a block segment.
4. The composition according to claim 3, wherein at least one of the block segments of the
25 block polymer has a vinyl ether structure.
5. The composition according to claim 1,

wherein the functional material of the predetermined function is a coloring material.

6. The composition according to claim 3,
5 wherein at least one of the segments of the block polymer has an oxyalkylene structure at a side chain.

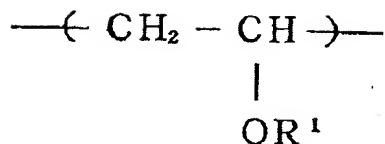
7. The composition according to claim 1,
wherein the change of the property of the block
10 polymer in response to the stimulus is a change from lyophilic to the lyophobic, or from lyophilic to lyophobic.

8. The composition according to claim 1,
15 wherein the stimulus to the block polymer is at least one selected from the group consisting of a change in temperature, irradiation with an electromagnetic wave, a change in pH of the composition and a change in a concentration of the composition.

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9. The composition according to claim 4,
wherein at least one of the block segments of the block polymer has a vinyl ether structure expressed by the following General Formula (1):

25 General Formula (1)



wherein R¹ is selected from the group consisting of a straight, branched or cyclic alkyl group having 1 to 18 carbon atoms, $-(\text{CH}(\text{R}^2)-\text{CH}(\text{R}^3)-\text{O})_1-\text{R}^4$ and $-(\text{CH}_2)_m-$
 5 $(\text{O})_n-\text{R}^4$, and l and m are independently selected from integers of 1 to 12 and n is 0 or 1, and R² and R³ are independently a hydrogen atom or CH₃, and R⁴ is a hydrogen atom, a straight, branched or cyclic alkyl group having 1 to 6 carbon atoms, Ph, Pyr, Ph-Ph, Ph-
 10 Pyr, -CHO, -CH₂CHO, -CO-CH=CH₂, -CO-C(CH₃)=CH₂ or CH₂COOR⁵, and if R⁴ is not a hydrogen atom, the hydrogen atom on the carbon atom may be replaced with a straight or branched alkyl group having 1 to 4 carbon atoms or F, Cl or Br, and the carbon atom in
 15 the aromatic ring may be replaced with a nitrogen atom, and R⁵ is a hydrogen atom or an alkyl group having 1 to 5 carbon atoms.

10. The composition according to claim 1,
 20 wherein a molecular weight distribution of the block polymer is 2.0 or less.

11. The composition according to claim 1,
 wherein at least one of the segments of the block

polymer has a glass transition temperature of 20°C or lower.

12. A method for production of a composition
5 comprising a block polymer encapsulating a functional material of a predetermined function and a solvent, wherein a property of the block polymer is changed in response to a stimulus, whereby the block polymer encapsulating the functional material agglomerates
10 together, the method comprising the steps of:

completely dissolving the block polymer in a solvent; and

encapsulating the functional material with the block polymer by causing a change in a solvent
15 environment.

13. The production method according to claim 12, wherein the change in the solvent environment is at least one selected from the group consisting of a
20 change in temperature, irradiation with an electromagnetic wave, a change in pH of the composition and a change in a concentration of the composition.

25 14. An image formation method wherein an image is formed through a process that a composition comprising a block polymer encapsulating a functional

material of a predetermined function and a solvent is applied to a medium, and a property of the block polymer is changed in response to a received stimulus, whereby the block polymer encapsulating the functional material agglomerates together.

15. The image formation method according to claim 14, wherein an image is formed on a medium through a process in which the composition comprising micelles of the block polymer encapsulating the functional material of a predetermined function and the solvent is applied to a medium, and the property of the block polymer is changed in response to a received stimulus, whereby the micelles composed of the block polymer encapsulating the functional material agglomerate together.

16. The image formation method according to claim 14, wherein the stimulus is at least one selected from the group consisting of a change in temperature, irradiation with an electromagnetic wave, a change in pH of the composition and a change in concentration of the composition.

17. An image formation apparatus comprising means for applying a composition to a medium to form an image on the medium, wherein the composition

comprises a block polymer encapsulating a functional material of a predetermined function and a solvent, the composition undergoes a process in which a property of the block polymer is changed in response to a received stimulus, whereby the block polymer encapsulating the functional material agglomerates together.

18. An image formation apparatus wherein the image formation apparatus is used for using a composition containing a micelle composed of a block polymer encapsulating a functional material of a predetermined function and a solvent to form an image through a process in which a property of the block polymer is changed in response to a stimulus, whereby the micelle composed of the block polymer encapsulating the functional material agglomerates together.

19. The image formation apparatus according to claim 17 wherein the stimulus is at least one selected from the group consisting of a change in temperature, irradiation with an electromagnetic wave, a change in pH of the composition and a change in concentration of the composition.

20. The image formation method according to

claim 14, wherein the functional material of the predetermined function is a coloring material.

21. The image formation method according to
5 claim 14, wherein the stimulus is a change in pH, and the size of particles in the composition comprising the block polymer encapsulating the functional material is increased by the change in pH, whereby an image is formed on a medium.